Buffalo 1999-0699

IN THE CLAIMS:

1   1. *(currently amended)* An automatic customer maintenance system for

2 automatically providing infrastructure maintenance in response to a customer

3 form/report/ticket in a communications network that includes a core communications

4 service and an Access Provider service, comprising:

5   a Work-Flow Manager, arranged to <u>automatically</u> trigger, for each customer

6 form/report/ticket, ~~each~~ <u>at least one</u> automatic <u>diagnosis</u> software program <u>from</u> ~~of~~ a

7 plurality of automatic <u>diagnosis</u> software programs <u>without human intervention</u>; and

8   a Maintenance Program Scheduler, coupled to the Work-Flow Manager, for

9 invoking at least one predetermined maintenance software program based upon

10 predetermined criteria being met by the form/report/ticket, <u>and the results of the at least</u>

11 <u>one automatic diagnosis software program, without human intervention.</u>

1   2. *(currently amended)* The automatic customer maintenance system of claim 1

2 wherein the plurality of automatic <u>diagnosis</u> software programs include:

3   an automatic diagnosing program for providing automatic diagnosis;

4   an automatic linking program for automatically linking the customer with an area

5 to solve a problem;

6   an automatic notification program for automatically notifying a maintenance

7 technician when the problem requires further analysis;

8   an automatic referral program for automatically referring the problem to the

9 ~~access provider~~ <u>Access Provider</u> service via a <u>first</u> gateway;

10   an automatic preparation for clearance program for automatically populating

11 clearance information and analysis codes on the ticket based on a diagnosis conclusion

12 sent by the ~~access provider~~ <u>Access Provider</u> service;

13   an automatic progress reporting program for automatically determining when a

14 status is owed to the customer;

15   an automatic verification program for automatically verifying if the problem has

16 been fixed;

17   an automatic customer notification program for automatically conveying

18 clearance information for the customer; and

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19   an automatic closing program for automatically checking for tickets that have

20   been conveyed to the customer.

1   **3.** *(currently amended)* The automatic customer maintenance system of claim 1

2   wherein the <u>at least one</u> predetermined maintenance software <u>program</u> ~~programs~~ for the

3   maintenance program scheduler include:

4   an automatic progress reporting program; and

5   an automatic closing program.

1   **4.** *(currently amended)* The automatic customer maintenance system of claim 1

2   wherein <u>the</u> Access Provider service is implemented using a <u>second</u> gateway for access

3   that is coupled to a data communication network of the communications network.

1   **5.** *(currently amended)* The automatic customer maintenance system of claim 1

2   wherein the customer form/report/ticket is initiated by an agent in a ~~Custom~~ <u>Customer</u>

3   Care Platform that is coupled to a data communication network that delivers the customer

4   form/report/ticket to a Business Maintenance Platform for processing <u>without human</u>

5   <u>intervention</u> in accordance with at least the automatic software programs.

1   **6.** *(original)* The automatic customer maintenance system of claim 5 wherein the

2   Business Maintenance Platform includes:

3   a Database for storing circuit and customer information;

4   a Ticket Unit for processing the customer form/report/ticket;

5   a Test Unit for testing a selected infrastructure portion of the communications

6   network;

7   an Alarm Unit for recording problems that the system detects in the network; and

8   an Event Unit having a Work-Flow Manager and a plurality of computer

9   programs/engines, wherein the Event Unit is used for monitoring events and initiating

10   activities based on events.

1   **7.** *(original)* The automatic customer maintenance system of claim 1 wherein the

2   Business Maintenance Platform is coupled in parallel to a Data Communication Network,

3   Service Provisioning Systems, a Work Management System, Network Management

4   Systems, a Billing System, and a Gateway.

1   **8.** *(currently amended)* An automatic customer maintenance system having a

2   Business Maintenance Platform for automatically providing<u>, without human intervention,</u>

5

3   infrastructure maintenance in response to a customer form/report/ticket in a

4   communications network that includes a core communications service and an Access

5   Provider service, the Business Maintenance Platform comprising:

6   a Database, for storing information related to circuits and customer information;

7   a Ticket Unit, for processing the customer form/report/ticket;

8   a Test Unit, for <u>automatically</u> testing a selected infrastructure portion of the

9   communications network;

10   an Alarm Unit, for recording problems that the system detects in the network; and

11   an Event Unit having a Work-Flow Manager and a plurality of computer

12   programs/engines, wherein the Event Unit is used for monitoring events and initiating

13   activities based on events, wherein the Database, the Ticket Unit, the Test Unit, the

14   Alarm Unit and the Event Unit are coupled in parallel to a data communication network,

15   Service Provisioning Systems, a Work Management System, Network Management

16   Systems, a Billing System, and a Gateway to ~~an~~ <u>the</u> Access Provider.

1   **9.** *(currently amended)* The automatic customer maintenance system of claim 8

2   wherein the Business Maintenance Platform is coupled to a Customer Care Platform

3   wherein the customer form/report/ticket is initiated by an agent in the ~~Custom~~ <u>Customer</u>

4   Care Platform that is coupled to the data communication network that delivers the

5   customer form/report/ticket to the Business Maintenance Platform for processing.

1   **10.** *(currently amended)* The automatic customer maintenance system of claim 9

2   wherein processing includes utilizing a plurality of automatic <u>diagnosis</u> software

3   programs.

1   **11.** *(currently amended)* The automatic customer maintenance system of claim 10

2   wherein the plurality of automatic <u>diagnosis</u> software programs includes:

3   an automatic diagnosing program for providing automatic diagnosis;

4   an automatic linking program for automatically linking the customer with an area

5   to solve a problem;

6   an automatic notification program for automatically notifying a maintenance

7   technician when the problem requires further analysis;

8   an automatic referral program for automatically referring the problem to the

9   ~~access provider~~ <u>Access Provider</u> service via a *gateway*;

6

10   an automatic preparation for clearance program for automatically populating

11   clearance information and analysis codes on the ticket based on a diagnosis conclusion

12   sent by the ~~access provider~~ Access Provider service;

13   an automatic progress reporting program for automatically determining when a

14   stat is owed to the customer;

15   an automatic verification program for automatically verifying if the problem has

16   been fixed;

17   an automatic customer notification program for automatically conveying

18   clearance information for the customer; and

19   an automatic closing program for automatically checking for tickets that have

20   been conveyed to the customer.

1   **12.** *(currently amended)* The automatic customer maintenance system of claim 8

2   wherein time-based maintenance software programs are initiated at predetermined times

3   by a maintenance program scheduler that is coupled to the Business Maintenance

4   Platform, the time-based maintenance software programs including:

5   an automatic ~~program~~ progress reporting program for automatically determining

6   when a status is owed to the customer; and

7   an automatic closing program for automatically checking for tickets that have

8   been conveyed to the customer.

1   **13.** *(original)* The automatic customer maintenance system of claim 8 wherein

2   core communications service is monitored using a customer gateway for Web access that

3   is coupled to a data communication network of the communications network.

1   **14.** *(currently amended)* The automatic customer maintenance system of claim 8

2   wherein the customer form/report/ticket is initiated by an agent in a ~~Custom~~ Customer

3   Care Platform that is coupled to a data communication network that delivers the customer

4   form/report/ticket to a Business Maintenance Platform for processing in accordance with

5   at least the automatic software programs.

1   **15.** *(currently amended)* A method for automatically providing, without human

2   intervention, infrastructure maintenance in response to a customer form/report/ticket in a

3   communication network that includes a core communications service and an Access

4   Provider service, comprising the steps of:

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5   generating a ticket/customer repair request regarding a problem;

6   diagnosing the problem <u>by using an automatic diagnosing program and using an</u>

7   <u>automatic linking program for automatically linking the customer with an area to solve a</u>

8   <u>problem</u>;

9   testing to determine whether the problem has been fixed;

10   generating clearance and analysis codes;

11   notifying the customer that the system has repaired the problem; and

12   closing out the ticket/repair request upon successful repair of the problem.

1   **16.** *(original)* The method of claim 15 wherein generating a ticket/customer

2   repair request regarding a problem is accomplished by a customer and the ticket is

3   transmitted to a Business Maintenance Platform for automatic infrastructure maintenance

4   processing.

1   **17.** *(original)* The method of claim 15 wherein generating a ticket/customer

2   repair request regarding a problem is accomplished by an agent of a Customer Care

3   Platform and transmitted to a Business Maintenance Platform for automatic infrastructure

4   maintenance processing.

1   **18.** *cancelled*

1   **19.** *(original)* The method of claim 15 wherein testing to determine whether the

2   problem has been fixed is accomplished by an automatic verification program for

3   automatically verifying if the problem has been fixed.

1   **20.** *(currently amended)* The method of claim 15 wherein generating clearance

2   and analysis codes is accomplished by an automatic preparation for clearance program

3   for automatically populating clearance information and analysis codes on the ticket based

4   on a diagnosis conclusion sent by the ~~access provider~~ <u>Access Provider</u> service.

1   **21.** *(original)* The method of claim 15 wherein notifying the customer that the

2   system has repaired the problem is accomplished by an automatic customer notification

3   program for automatically conveying clearance information for the customer that displays

4   a circuit trouble description to the customer via e-maintenance, a web-based system that

5   provides customers direct access to view/update their trouble ticket, and by an Interactive

6   Voice Response system.

8

1   **22.** *(original)* The method of claim 15 wherein closing out the ticket/repair
2   request upon successful repair of the problem is accomplished by an automatic closing
3   program for automatically checking for tickets that have been conveyed to the customer.

1   **23.** *(currently amended)* The method of claim 15 wherein an automatic
2   notification program for automatically notifying a maintenance technician when the
3   problem requires further analysis is utilized when a trouble ticket is sent to a maintenance
4   technician as soon as the problem is diagnosed as a telephone service/core
5   communications service ~~problem/requires~~ problem requires manual intervention.

1   **24.** *(original)* The method of claim 15 wherein an automatic progress reporting
2   program for automatically determining when a status is owed to the customer is utilized
3   to implement an Interactive Voice Response system that automatically phones the
4   customer periodically and informs him/her/an answering machine of the current status of
5   his/her ticket.

1   **25.** *(original)* The method of claim 15 wherein an automatic verification
2   program for automatically verifying if the problem has been fixed is utilized to run tests
3   and perform alarm checks to determine if an Access Provider has fixed the problem that
4   is being reported as cleared or a manual intervention has occurred to solve the problem.

1   **26.** *(currently amended)* A method for automatically providing infrastructure
2   maintenance in response to a customer form/report/ticket in a communications network
3   that includes a core communications service and an Access Provider service, comprising
4   the steps of utilizing, without human intervention, software programs for automatically:
5   preparing, by one of a customer and an agent, a customer form/report/ticket
6   concerning a circuit problem and sending the customer form/report/ticket to a Business
7   Maintenance Platform;
8   determining whether the circuit problem reported ahs been caused by a higher
9   level facility/equipment/lower level circuit problem, and where the circuit problem
10   relates to a higher level facility/equipment, automatically preparing a second ticket for
11   the higher level facility/equipment and correlating the customer form/report/ticket and the
12   second ticket with respect to updates;
13   diagnosing the circuit problem and, where the circuit problem has been fixed,
14   initiating clearing of the ticket, and where the problem exists in the Access Provider's

9

15   portion of the circuit, automatically sending an electronic referral to an Access Provider,

16   and determining that manual intervention by a maintenance technician is needed, sending

17   an electronic message to the maintenance technician alerting the maintenance technician

18   to the need for repair;

19   sending, upon the Access Provider's/the maintenance technician's completion of

20   the repair, a message requesting verification that the problem has been fixed;

21   testing and performing alarm checks to determine if the circuit problem has been

22   repaired;

23   ~~where~~ when the circuit problem has been repaired, pre-populating clearance

24   information and analysis codes on the customer form/report/ticket to indicate that the

25   circuit problem has been repaired;

26   providing an update to the customer, by one of an interactive voice response

27   system and an email, indicating that the problem is fixed; and

28   ~~where~~ when the customer confirms that the circuit problem is fixed, closing out

29   the ticket~~; and~~.

1   ~~28.~~ 27. (currently amended) The method of claim ~~27~~ 26 wherein, following

2   clearing, alternatively, an email (EM) is sent automatically to update the customer; and

3   ~~where~~ when the customer indicates that the problem is fixed, automatically closing out

4   the customer form/report/ticket.

1   ~~29.~~ 28. (currently amended) The method of claim ~~27~~ 26 including automatically

2   sending an electronic message to the Access Provider to indicate that the public switched

3   network service accepts closure after verification that the circuit is working correctly.

1   ~~30.~~ 29. (currently amended) The method of claim ~~27~~ 26 including automatically

2   reporting upon one of the following: a predetermined time having elapsed, an initiation

3   by the automatic referral, an initiation by the automatic notification, and an indication

4   that a report on progress due is needed.

10